

REMARKS

Reconsideration of the above-identified patent application, as amended, is respectfully requested.

Applicant has reviewed the prior art cited by the Examiner. In particular, applicant has noted U.S. Patent 6,554,530 issued to Moore and 5,314,261 issued to Stephens both of which have been cited as identically showing the structure claimed in one or more of applicant's claims. Applicant has therefore amended claims 1 and 4, cancelled the remaining claims and added new claims 20-22 to more appropriately distinguish applicant's invention from those disclosed in the cited references.

When a vehicle impacts a guard rail adjacent a highway or a barrier wall extending along a racetrack, the guardrail and barrier wall provides stiff resistance with the result that the force vector from the impacting vehicle is directed substantially into the guardrail and barrier wall. The net result is that the driver of the impacting vehicle is subjected to great de-acceleration forces.

In order to minimize the forces applied to the driver, various structures have been devised to absorb the impacting force. Typically, a plurality of crushable barrels or similar devices are placed at each exit of a highway to absorb the impacting force in the event the driver does not correctly steer the vehicle onto the correct exit path. Likewise, various crushable devices have been mounted outwardly of guardrails and racetrack barrier walls such as shown in the cited U.S. Patents 6,554,530 and 5,314,261.

Applicant's device not only absorbs some of the impact force directed towards the guard rail or barrier wall but in addition directs the impacting vehicle along the length of the guardrail or barrier wall. Thus, the impacting force from the vehicle is directed not only

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into the barrier but also in a direction along the length of the barrier minimizing the force applied to the driver.

U.S. Patent 5,314,261 issued to Stephens discloses a vehicle crash cushion. In other words, the impacting force is directed into the cushion mounted to the barrier wall. The Stephens device consists of a plurality of tubes located between the barrier wall and a panel 12 that is designed upon impact to move towards the barrier wall and not along the length of the wall. "The longitudinally extending cables 46 are provided to prevent the struts 38 and therefore the panels 12 from moving excessively along the direction of the arrow A when a vehicle impacts cushion 10." (column 3, lines 19-31). Adjacent panels 12 (Fig. 1) are attached together by a bracket 48. In the Moore device, a plurality of panels 22 have proximal ends pivotally mounted to the barrier wall with absorbing materials spacing one panel apart from an adjacent panel. Upon impact, the absorbing materials located between adjacent pivoting panels are squeezed. The squeezed absorbing material forces the adjacent panel to pivot toward the wall. The panels have irregular shapes and do not extend during the impact sequence along the barrier wall to provide a flat surface. As a result, the vehicle impacting force is directed entirely into the wall as shown in Fig. 2.

Referring to applicant's amended claim 1, the first and second impact panels are defined as having proximal ends that are fixedly mounted directly to the barrier as distinguished from the Stephens panels 12 that are mounted by posts to the barrier. The proximal ends of applicant's impact panels are immovable when impacted by a vehicle as distinguished from the pivoting proximal ends of the Moore panels. Most importantly, both of applicant's impact panels have portions between their opposite ends that extend

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parallel to the barrier wall and in overlapping relationship. For example, the downstream panel 100 located in the extreme left of Fig. 8 has a outer portion extending parallel to the barrier wall that is positioned adjacent and inwardly of the overlapping outer portion of the panel 100 located to its immediate right as viewed in Fig. 8. The two portions in overlapping relationship are not connected together and are independently movable. As a result, in the event a vehicle impacts a first impact panel 100, the outer portion for the first impact panel extending parallel to the barrier wall will move towards the barrier wall while at the same time moving against the outer portion of the adjacent second impact panel. In such a manner, a plane extending along the length of the barrier wall is formed directing the impacting vehicle not only towards the barrier wall but also along the length of the barrier wall.

Claim 4 has been amended to emphasize that the first impact panel directly contacts and deflects the second impact panel sufficiently to deflect the second impact panel against the second crushable member as distinguished from the Moore system wherein the second impact panel is deflected by the squeezable material located between the adjacent first and second impact panels. Applicant's claim on the other hand requires one impact panel to directly contact and deflect another impact panel.

New claim 20 has been added emphasizing that each impact panel has a first inner plate positioned adjacent the barrier. The first inner plate is joined by an intermediate plate to an outer plate with the inner plate and outer plate being parallel to the barrier whereas the intermediate plate extends outwardly from the barrier in a direction extending generally along the length of the barrier from the proximal end of the impact panel to the distal end of the impact panel. The outer plate is spaced apart from the

barrier forming a cavity in which is located the crushable member. The claim emphasizes that the outer plate of the first impact panel rests against and outwardly of the outer plate of the second impact panel forcing the second outer plate towards the barrier when the first impact panel is impacted by a vehicle. Most importantly, the first outer plate and second outer plate are flat and extend in the direction of the barrier directing the impacting vehicle in a direction along the barrier. Such impact panels as defined are not disclosed or suggested by the cited references.

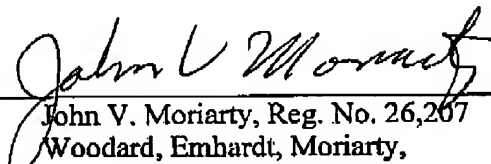
Claim 21 adds the particular fastening system for securing the impact panels to the barrier that incorporates a pliable material thereby protecting the barrier wall.

New method claim 22 defines the method as described in the specification and stresses that the flat portion of one impact panel is moved against the flat portion of the adjacent impact panel with the vehicle then directed along the barrier by the two flat portions.

In summary, applicant stresses that his barrier system includes outer portions of adjacent impact panels that direct the impacting vehicle along the length of the barrier thereby allowing for a portion of the impact collision force to be absorbed by the crushable material while at the same time allowing the remaining portion of the collision energy to be dissipated as the vehicle travels along the length of the barrier being directed thereby by the impact panels' outer portions.

For the above reasons, it is believed the subject application is in condition for allowance and such action by the Examiner is respectfully requested.

Respectfully submitted,

By 
John V. Moriarty, Reg. No. 26,207
Woodard, Emhardt, Moriarty,
McNett & Henry LLP
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456